# PREFACE

## DEDICATION

We dedicate this work to Joan Marjorie Dingley on the occasion of her 90th birthday.

Joan Dingley was born in Auckland, New Zealand, on 14 May 1916. It is particularly fitting that we recognize the scientific contributions of Miss Dingley in this publication dedicated to the *Hypocreales*. Her works on the *Hypocreales* of New Zealand (Dingley 1951 a, b; 1952 a, b; 1953 a, b; 1956 a, b; 1957 a, b) established her as a mycologist of international standing while setting a very high standard of excellence for monographic study of the *Hypocreales*. Especially noteworthy is her early recognition of the necessity to document the entire life-history of pleomorphic ascomycetes.

Miss Dingley completed her M.Sc. in Botany in 1940 with a thesis on the ecology and morphology of the New Zealand tree-fern *Dicksonia squarrosa.* Soon afterward, she began her 35-year career with the Plant Diseases Division of the New Zealand Department of Scientific and Industrial Research (D.S.I.R.) at Mt. Albert in Auckland. During WW II, when men of military age were needed to fight in the war, Miss Dingley was one of the few women appointed to scientific agencies. She was the only one of these appointees whose work impacted directly on agriculture, horticulture and horticultural science, and she excelled despite battles in a generally unsupportive, male-dominated

environment. She can reasonably claim to be the first woman horticultural scientist in New Zealand, and she certainly paved the way for the many women involved as scientists in New Zealand's horticultural research today.

Miss Dingley played a critical role in envisioning and then establishing the Auckland Regional Botanic Gardens, which opened in 1982. She served for several years on the Garden's Technical Advisory Committee, and was Chairman of the Native Plant Evaluation Committee, as well as being a member of the Friends Committee and a member of the Board of Trustees.

Miss Dingley's first mycological research project involved searching for a way to rot-proof canvas. Canvas was quickly destroyed in the tropical conditions found in the Pacific war theatre. Having identified many hyphomycetes that were associated with rotting fabric, she tested agents that could prevent the destruction of canvas caused by fungi. After the war she was denied the opportunity to study for a doctorate that was offered to returning servicemen. Additionally, since mycology was not a subject taught during her graduate training, she had to learn her skills in fungal taxonomy and plant pathology on the job. Early in the 1950's she traveled to the Commonwealth Mycological Institute (CMI, then at Kew, U.K.), which at the time was the premier mycological institution of the world. Her strongest influence came from the taxonomist E.W. Mason. During that exhilarating time at CMI she joined her contemporary students of hyphomycetes, Colin Booth

and Stanley J. Hughes, in taxonomic discussions with Mason. It was Mason who encouraged them in their life-history studies. While at Kew, Miss Dingley developed an enduring friendship with the leading ascomycete systematist R.W.G. Dennis. By 1960 she was recognized as a world authority in taxonomy of the *Hypocreales*.

Miss Dingley was, for several years, the taxonomic mycologist in the Department for Scientific and Industrial Research and for much of New Zealand agriculture. She succeeded G.H. Cunningham as the mycologist at D.S.I.R.; as Cunningham's health deteriorated, she brought his bulletins on the *Thelephoraceae* and *Polyporaceae* of New Zealand to publication in 1963 and 1965, respectively. She was the "go to" person when questions arose about food health, fungal pathogens of plants, humans and animals, and microbial aspects of forensic enquiries. In 1959 she identified and characterized the cause of facial eczema in sheep as the hyphomycete *Sporidesmium bakeri* (now *Pithomyces chartarum*), and was part of the team that developed a management strategy for this serious disease affecting the mainstay of New Zealand's economy. In 1969 she published the first list of plant diseases found in New Zealand (Dingley 1969). She collected extensively – one might even say fearlessly – in remote forests of New Zealand at a time when roads were at best poorly developed. She often worked alongside foresters and stayed in truly rustic accommodations. She saw the number of collections in PDD rise from 4 000 to 35 000 before she retired in 1976.

Joan Dingley was the first New Zealand representative on the executive council of the International Mycological Association. Her international reputation as a mycologist brought New Zealand mycology to the world stage and she attracted such overseas mycologists as Egon Horak (*Agaricales*) from Switzerland, and the Canadians Stanley Hughes (metacapnodiaceous sooty moulds) and Bryce Kendrick (hyphomycetes) to collect and study the New Zealand species of their special groups of fungi.

In 1959 Robert Francis Ross McNabb joined the systematic mycology section as assistant taxonomist. Between 1961 and 1964 he studied for a Ph.D. degree in England; he returned to work on basidiomycete taxonomy at Mt Albert in 1964, and took up a position at Lincoln College in 1967. Ross McNabb died in 1972 (see biography in Thomson 1973). The present writer was on the staff of the systematic mycology section between 1973 and 1985. Today five mycologists are on the staff at the PDD herbarium: R.E. Beever, P.J. Buchanan, P.R. Johnston, E.H.C. McKenzie, and S.R. Pennycook. In 2004 the administration of Landcare Research/Manaaki Whenua, formerly D.S.I.R., officially named the mycology laboratory the J.M. Dingley Microbiology Laboratory in recognition of her many outstanding contributions and ongoing inspiration.

Miss Dingley has received many honours. In addition to her M.Sc., she received a D.Sc. (*honoris causa,* Massey University). She was named as an Officer of the Most Excellent Order of the British Empire (OBE). She is also an Associate of Honour of the Royal New Zealand Institute of Horticulture.

(This biography is derived in part from Joan Dingley's Honorary D. Sc. citation, many thanks to R.L. Bieleski for making this information available. The photo was provided by HortResearch, NZ, and A.R. Ferguson).

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# *Hypocrea* and *Trichoderma* studies marking the 90th birthday of Joan M. Dingley

## INTRODUCTION

The 19th and early 20th centuries saw great expeditions of exploration to remote lands such as Australia, New Zealand, southern Africa, South America and Southeast Asia. Missionaries, traders, travelers, and naturalists sent biological specimens of all sorts to established scientific centres in Kew, Berlin and Paris. The Rev. M.J. Berkeley and M.C. Cooke, in the United Kingdom, E.M. Fries in Uppsala, Jean François C. Montagne and Narcisse T. Patouillard in Paris, Hans Sydow in Berlin, and others described the newly found diversity of hypocrealean fungi. Descriptions were published, most often without regard for – and possibly in ignorance of – species that had already been described. At least 400 species of *Hypocrea* were thus proposed. Early monographic efforts were made by G. Winter (1887) for European species and F.J. Seaver (1910) for North America. These were based on the morphology of the teleomorph or its substratum, and no regard was given to the whole life-cycle, to the anamorphs. By the mid to late 19th century, mycologists knew that ascomycetes could be pleomorphic, producing spores in addition to those found in the stroma. The Tulasne brothers' (1865) elegant illustrations conclusively demonstrated for the first time the link between *H. rufa* and *T. viride*. Ascomycetes were being grown in pure artificial culture late in the 19th century; this enabled mycologists such as von Tavel (1891) to elucidate life-cycles of hypocrealean fungi by germinating ascospores and observing the asexual forms that were produced in culture.

The first modern mycologist to have concertedly collected *Hypocrea* specimens and isolated their ascospores into pure culture, describing the anamorphs from pure culture, was Joan M. Dingley, in New Zealand. Miss Dingley described the *Trichoderma* anamorphs for ten species of New Zealand *Hypocrea* in her paper, Life-History Studies in *Hypocrea* (Dingley 1957b). This